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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,411	10/17/2005	Michael Brian Edward Bremner	1171/42784/157-PCT-US	9055
279 7590 11/17/2009 TREXLER, BUSHNELL, GIANGIORGI, BLACKSTONE & MARR, LTD. 105 WEST ADAMS STREET SUITE 3600 CHICAGO, IL 60603			EXAMINER OSTRUP, CLINTON T	
			ART UNIT 3771	PAPER NUMBER
			MAIL DATE 11/17/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/533,411

**Applicant(s)**

BREMNER ET AL.

**Examiner**

CLINTON OSTRUP

**Art Unit**

3771

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 17, 26-36, 42 and 46-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 17, 26-36, 42 and 46-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 9, 2009 has been entered.
2. As directed by the amendment claims 1, 31-32, and 42 have been amended. Claims 2-16, 18-25, 37-41, and 43-45 are cancelled and no new claims have been added. Thus, claims 1, 17, 26-36, 42, and 46-51 are pending in this application.

### ***Claim Objections***

3. Claim 1 is objected to because of the following informalities: Claim 1 is objected to because it appears a conjunction word is missing in line 8 between the "a sensor," and "a housing". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 17, 26-34, 42, and 46-47, 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gradon et al (6,272,933) and further in view of Strandberg, Jr. et al. (4,525,937).

Gradon discloses a system (figure 5) for delivering a supply of gases to a patient (13) comprising: a gases supply (1) providing a flow of gases (indicated by arrow in tube 6), a humidifier (10) receiving said flow of gases from said gases supply and capable of humidifying (via 4) said flow of gases up to a level of humidity prior to delivery to said patient (13), a conduit (43 & 44) conveying said flow of gases from said humidifier (10) to said patient (13), a sensing device (figure 3 encompassing the releasable tube 42 with a port 41 and sensing probe 19) to sense the humidity (See: col. 13, lines 48-57), temperature (via 34) or flow rate (via 35) of said flow of gases after said flow of gases have been humidified by said humidifier (10), said sensing device comprising a cartridge (42) or open tubular section (42) having a port (41), a sensor (34 & 35), a housing (19) releasably (it is possible to take the sensors 34 & 35 out of 19 (See: col. 9, lines 1-38)) containing said sensor (34 and 35), in use said housing (19) being sealably connected to the port (41), and wherein the cartridge (42) or open tubular section (42) is releasably coupled (42 to 43 and 42 to 44), in use, in line between said humidifier (10) and said conduit (43 & 44), the sensor (34 & 35) being coupled to said cartridge (42) or open tubular section (42) such that said sensor (35 & 35) is exposed to said flow of gases through said cartridge (42) or open tubular section (42).

However, Gradon lacks specifically teaching a filter attached to the housing and the filter being located such that said sensor is exposed to a portion of said flow of

gases passing through said filter only, with a significant portion of the flow of gases passing from the humidifier to the conduit without passing through the filter material.

Strandberg, Jr. discloses a sensing device to sense the humidity of a flow of gasses with a filter (11a & 11b) attached to the housing (14a) that is releasably (capable of being released) placed in an open tubular section that is releasably (capable of being released) coupled to a tubular section such that the sensor components are exposed to a portion of the flow of gasses passing through the filter material only, with a significant portion (portion that does not go through 11a & 11b) of the flow of gasses passing directly through without passing through the filter material. See: col. 2, line 10 - col. 3, line 30 and figure 1-3.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the gas humidification and sensing device disclosed by Gradon, by utilizing a sensor with a filter material attached to its distal end as taught by Strandberg, Jr., in order to obtain a humidified gas delivery system that utilizes a filter material (11a & 11b) to ensure good electrical contact and form an air sample cup that can be used to determine the humidity of gas in the gas delivery conduit.

Regarding claim 17, Gradon discloses a humidifier (10) with a humidification chamber (4) adapted to receive a volume of water (8) and a water heater (9) that heats the water. The flow of gases passes through the humidification chamber, via a gases inlet (3) and out via a gas outlet (12) and the flow of gases is humidified by evaporating water. See: col. 7, lines 64-66.

Regarding claim 26, Gradon discloses a humidifier (10) with a controller (11) to control the water heater (9) and the level of humidity or temperature of the flow of gases flow. See: col. 7, lines 50-63.

Regarding claim 27, Gradon discloses sensors (34 & 35) that are connected to a controller (11) and conveys a sensed level of humidification of the flow of gases to said controller, and the controller controls the water heater (9) to alter said sensed level of humidification of said flow of gases to a predetermined humidification level. See: col. 13, line 58 - col. 14, line 20.

Regarding claim 28, Gradon discloses a gas outlet temperature of 37°C and containing 44 mg of water vapor per liter, thus meeting the predetermined humidification level as claimed. See: col. 14, lines 4-13.

Regarding claim 29, Gradon discloses connections formed on the open tubular section (42) wherein one side is connected to the humidifier (via 43) and the other side is connected to a conduit (via 44) that leads to a patient. See: col. 10, lines 28-47 and figures 3 & 4 wherein the tubular connector is connected to 43 & 44.

Regarding claims 30 & 51, the connections of the open tube (42) and each side of the conduit (43 & 44) of Gradon are friction fitted. See: figures 3 & 4 of Gradon.

Regarding claims 31 & 50, Gradon discloses a sensing device (figure 3) to sense humidity (See: col. 13, lines 48-57), temperature (via 34) or flow rate (via 35) of a flow of gases (indicated by arrow in tube 6) in a conduit (43 & 44) after said flow of gases have been humidified (via 10) by a humidifier (10) and providing feedback (Figure 6) to a controller (11) which controls said humidifier (10), said sensing device (figure 3)

comprising: a cartridge (42) or open tubular section (42) having a port (41), a sensor (34 & 35), a housing (19) releasable (34 & 35 can be removed from 19) containing said sensor (34 & 35), in use said housing (19) being sealably connected to the port (41), and wherein said cartridge (42) or open tubular section (42) is releasably coupled (42 to 43 and 42 to 44), in use, in line between the humidifier (10) and the conduit (43 & 44), the sensor (34 & 35) being coupled (via 41) to said cartridge (42) or open tubular section (42) such that said sensor (34 & 35) is exposed to said flow of gases through said cartridge (42) or open tubular section (42), and Strandberg, Jr., teaches a sensing device (figures 1-3) with a sensor (12a & 12b) positioned in the gas flow path (inside figure 2) and covered with an attached filter (11a & 11b) which would be exposed to a flow of gasses through a filter material (11a & 11b) with the filter material (11a & 11b) being located such that the sensor is exposed to a portion of the flow of gasses passing through the filter material only, with a significant portion (portion that does not go through 11a & 11b) of the flow of gasses passing directly through without passing through the filter material.

Regarding claim 32, Gradon discloses a housing (19) containing a sensor (34 & 35), and the housing extending through or residing within the open tubular section (42) and at least part of said housing being exposed to the flow of gases.

Regarding claims 33 and 46 Strandberg, Jr., teaches the filter material (11a & 11b) is a semi-permeable (hygroscopic cloth, indicated at 11a in FIG. 3, preferably cotton cloth, sandwiched between a porous filter 11b) material. See: col. 2, lines 36-60.

Regarding claims 34 and 47 Strandberg, Jr., teaches a filter material that is a porous (11a & 11b) is a semi-permeable (hydropscopic cloth, indicated at 11a in FIG. 3, preferably cotton cloth, sandwiched between a porous filter 11b) media and modification of sizes or the perforations is well within the skill of having ordinary skill in the art and one skilled in the art would preferably make the perforations in the micron level to prevent bacteria from contacting the sensor.

Regarding claim 42, Gradon discloses a system wherein the housing (19) extends through or resides within said cartridge (42) or open tubular section (42) and at least part of said housing (bottom part) is exposed to said flow of gases.

**6.** Claims 35-36 and 48-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gradon et al (6,272,933) in view of Strandberg, Jr. et al. (4,525,937), as applied to claims 1 and 31 and further in view of Wittmaier et al. (4,366,821).

The combined references disclose all the limitations of claim 35, except the sensing device further including a heater to provide heat to the sensor.

Wittmaier teaches a sensing device (figure 2) wherein the sensor (14) has a heating element (30) attached to the housing (12 & 26), which would provide heat to the sensor.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a heater to the sensing device disclosed by the combined references in order to provide a means for quickly dehumidifying the sensor components without disconnecting the device.



***Response to Arguments***

7. Applicant's arguments with respect to claims 1, 17, 26-36, 42, and 46-51 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CLINTON OSTRUP whose telephone number is (571)272-5559. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on (571) 272-4835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Clinton Ostrup/  
Examiner, Art Unit 3771

/Justine R Yu/  
Supervisory Patent Examiner, Art Unit 3771